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Forest Service

**Pacific
Northwest
Region**

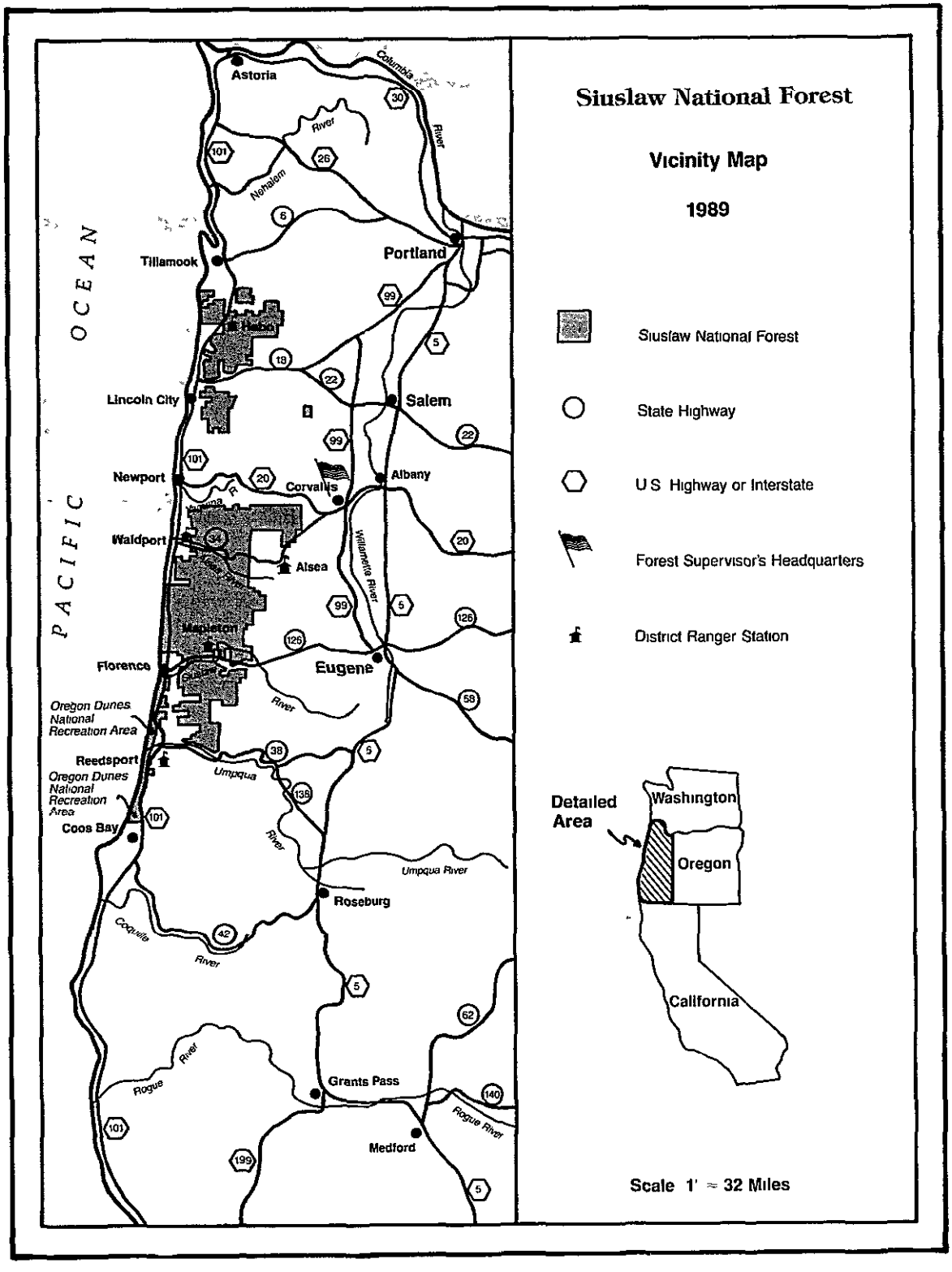
1990

Summary

Final Environmental Impact Statement

Land and Resource Management Plan

Siuslaw National Forest


Siuslaw National Forest
Vicinity Map
1989
Siuslaw National Forest
State Highway
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Forest Supervisor's Headquarters
District Ranger Station
Detailed Area
Washington
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Scale 1" = 32 Miles
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SUMMARY

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SUMMARY

INTRODUCTION

The Final Environmental Impact Statement (FEIS) for the Land and Resource Management Plan (Forest Plan) discusses the alternative strategies for management of the Siuslaw National Forest. The Preferred Alternative is developed into the accompanying Forest Plan The Forest Plan will guide management of the Forest for the next 10 to 15 years, unless conditions indicate a revision is needed sooner

The Draft Environmental Impact Statement (DEIS) and Proposed Land and Resource Management Plan were released for public review and comment in November, 1986 A Supplement to the DEIS (the Supplement) was released in October, 1988 The Supplement was prepared in response to decisions by the Chief of the Forest Service and the Deputy Assistant Secretary of Agriculture regarding two appeals brought by the Northwest Forest Resource Council in 1986 The Supplement provided information about an additional alternative, that represents continuation of the Timber Resource Plan of 1979, and presented a new appendix about 'Management Requirements" of the National Forest Management Act of 1976

The FEIS and Forest Plan were developed in response to public comments on the DEIS and Supplement and incorporate suggestions made by the public and government agencies Changes that were made between the DEIS and FEIS are described throughout the FEIS and highlighted in sections near the beginning of each chapter

This is a general summary of the FEIS. It emphasizes the issues and concerns raised by the public and local, state, and federal agencies regarding the management of the Siuslaw National Forest. The Summary briefly describes the public response to the DEIS, changes made between the DEIS and the FEIS, the purpose and need for the FEIS, the affected environment, the 10 alternatives developed to address the issues and concerns, and the environmental consequences of implementation of each of the alternatives.

PURPOSE AND NEED

The purpose of the Forest Plan is to direct all natural resource management activities on the Forest Preparation of the Forest Plan is required by the Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA), as amended by the National Forest Management Act of 1976 (NFMA), and the associated National Forest System Land and Resource Planning Regulations (36 CFR 219)

The preparation of an Environmental Impact Statement disclosing a broad range of alternatives and identifying a Preferred Alternative is required by the National Environmental Policy Act of 1969 (NEPA) and Council on Environmental Quality Regulations (40 CFR 1500) The FEIS is required because the Forest Plan is a major federal action with a significant effect on the quality of the human environment For purposes of disclosure under NEPA, the FEIS and the accompanying Forest Plan are treated as combined documents.

THE PLANNING PROCESS

The NFMA implementing regulations require that several planning steps be used to develop the FEIS and the accompanying Forest Plan These planning steps are:

1. Identification of issues, concerns, and opportunities
2. Development of planning criteria.
3. Inventory of data and collection of information.
4. Analysis of the management situation.
5. Formulation of alternatives.
6. Determination of estimated effects of the alternatives.
7. Evaluation of alternatives.
8. Selection of the proposed action
9 Plan implementation.
10. Plan monitoring and evaluation.

The results of the environmental analysis (Steps 1 to 8 above) are documented in the FEIS The FEIS is used by the Regional Forester to select a preferred alternative The decision is documented in a Record of Decision (ROD) which is available to the public. Issuance of the ROD will complete Step 8 and initiate the last two steps

PUBLIC RESPONSE TO THE DEIS

About 925 copies of the DEIS and Proposed Forest Plan were distributed to government agencies, local libraries and interested members of the public In addition, a "Reviewer's Guide" was sent to hundreds of individuals. Numerous public meetings were held around the Forest to assist the public in understanding the forest planning process and the Proposed Forest Plan.

The Forest received over 3,600 letters on the DEIS during the 120-day review period The most popular form of response (about 65%) was the form coupon generated by the Siuslaw Timber Operators. Individual letters and postcards made up the next largest group of replies (28%), and the remaining replies came as form letters, Forest Service response forms, petitions, and formal resolutions Most of the replies came from Oregon (76%), but some also came from 20 other states About 2,100 letters were received on the Supplement during the 90-day review period, with the majority (97%) coming from a form letter of the Siuslaw Timber Operators

Each letter contained one or more comments These were analyzed and categorized by type. The Interdisciplinary Team read the comments to learn of omissions in the documents, technical problems with analysis and general preferences for resource uses

The largest group of comments (65%) were on the general topic of timber supply and local economies Many people are concerned about timber harvest levels and jobs, and the effect on county revenues and community stability. Most of the respondents would like to see the Forest managed intensively for timber production and feel the other resources will remain in satisfactory condition.

Many respondents commented on old growth, recreation opportunities, and fish and wildlife resources. Many people feel that old-growth forests should be protected and unroaded areas be preserved for future generations. There were concerns that the level of harvest exceeded the ability of the Forest to

maintain site productivity, maintain diversity of plant and animal species and protect resources for fish and wildlife Numerous individuals expressed concerns about timber harvests on steep slopes, protection of riparian areas, and the cumulative effects of sediment on water quality Some feel the Forest should provide more protection for riparian areas and fish habitats; a few think there is too much being done, resulting in less timber production

The issues of undeveloped, roadless areas and Special Interest Areas received a large number of comments Several environmental groups would like to see the Forest protect more of its natural heritage and provide hiking opportunities in undeveloped areas Comments expressed strong support for the establishment of all the potential SIAs and maintenance of most of the undeveloped areas.

A large group of local respondents commented on Sutton area management Many people feel the area should remain undeveloped to discourage heavy recreational use and should be entirely closed to off-road vehicles (ORVs); others would like to see more areas along the coast open to ORV recreation and feel this is a legitimate use of National Forest land.

The state of Oregon, through meetings with the Federal Plans Coordinator and various agency representatives, expressed concerns about timber modeling problems and the effects of the Proposed Plan on fish habitats, spotted owl habitat management, undeveloped recreation opportunities, and scenic protection along the major travel corridors The Forest made several adjustments to the timber yield projection model and management emphases in the Preferred Alternative in response to the state's concerns.

CHANGES BETWEEN DRAFT AND FINAL

The abundant public response to the DEIS provided valuable suggestions for improving the Proposed Forest Plan Several technical reviews offered recommendations for model and data changes to better analyze resource projections and environmental effects

The IDT evaluated many suggested changes and held meetings with various interest groups to discuss options Many changes were made to models, analysis methods, and the preferred alternative to address the concerns raised by the public comment Changes to the Preferred Alternative were reviewed with Forest staff, state agencies and many public interest groups. A summary of the revisions made between draft and final EIS follows:

General Changes:

1 The final Supplement to the EIS for an Amendment to the Pacific Northwest Regional Guide was issued in July, 1988 The December 1988 Record of Decision for the Supplement provides Regional guidelines for maintaining viable populations of northern spotted owls. Changes in management direction were incorporated in the FEIS resulting in changes in the habitat network for all alternatives The new standards and guidelines for spotted owl habitat requirements were used to assess alternative methods to meet the Management Requirements of NFMA

2. The Pacific Northwest Region's FEIS for Managing Competing and Unwanted Vegetation was released subsequent to the DEIS. Changes were made to the Forest's management direction to be consistent with the guidelines presented in the FEIS to reflect a reduced emphasis on herbicide use.

3. Alternative NC, the 'No Change' alternative, requested by the Northwest Forest Resource Council, is incorporated in the FEIS from the Supplement. This alternative represents a continuation of the Timber Resource Plan of 1979, as amended by the 1984 Oregon Wilderness Act, without adjustments to meet NFMA regulations or compliance with the Pacific Northwest Regional Guide's spotted owl amendment

4. Alternative E (Departure) received few public comments, and due to some timber model corrections, was no longer needed in the range of alternatives Other alternatives resolve the timber supply issue better. The alternative was not included in the FEIS

5. A summary of the analysis of Management Requirements having significant effects on other resources is included in the FEIS. A detailed analysis is presented in Appendix H, which is a revision of Appendix K in the Supplement to the DEIS

6. As a result of public input and management concerns over protection of water and related soil and fishery resources, current management practices designed to protect and enhance water quality are more fully described. The practices, called "Best Management Practices" are described in the FEIS, Appendix J and in Standards and Guidelines for the Forest Plan

7. The proposed Marys Peak Scenic-Botanic Area was officially designated as a Special Interest Area by the Regional Forester in 1989.

8. Two potential Research Natural Areas in the Oregon Dunes National Recreation Area (NRA) were withdrawn from consideration at this time

Changes in Analysis for All Alternatives:

The following are revisions and changes made in the analysis process for all alternatives:

1 Timber yield projections were improved by making data and model adjustments to correct errors identified during review of the draft.

   a. The yield tables used to estimate timber outputs from existing timber stands were updated to reflect growth through the midpoint of the first planning period, 1994

   b The stand ages for all timber stands modeled in the planning model, FORPLAN, were updated to 1990, the projected year for implementation of the Plan The model data base was also revised to reflect harvest activity since the last update in 1985 through 1989

   c. The conversion factor for the board-foot·cubic-foot ratio was corrected The factor is used in the planning model, FORPLAN, to calculate board feet of timber output from cubic feet of projected timber yields The average Forest-wide board-foot·cubic-foot ratio increased from 4.7 to 5.4.

   d. Errors were corrected in the percentage of hardwood volume in existing timber stands.

   e Reductions were added to timber yields to account for the need to leave green trees in all harvest units to maintain adequate wildlife tree (snag) habitat for cavity-nesting birds.

f A number of other changes were made in managed timber yield tables relative to commercial thinning activities, fertilization, genetic gains, reductions in yields due to root rot and defect and breakage, and timber revenues.

2 The Fish Habitat Index Model was modified to limit the influence of upland areas on large woody debris levels and to increase· a) existing smolt habitat capability, b) reliance on habitat quality as determined by large woody debris levels, c) effectiveness of headwall leave areas in preventing landslides, d) efficiency of leaving streamside buffers, and e) the length of the recovery period before large woody debris is again produced in riparian areas after logging.

3 The practice of leaving vegetation areas on steep headwalls to protect watershed conditions is maintained, but the average modeled size of the leave areas was reduced from 5 to 4 acres to more closely reflect actual practices of the past 5 years This resulted in about 11,300 fewer acres assigned to leave areas

4. The model used to project elk habitat capability through time was made consistent with the new Westside elk model developed in the Region in 1988 The new model accounts for size and spacing of openings as a factor influencing habitat capability

5. A recovery plan for bald eagles was developed by the U S Fish and Wildlife Service in 1986. The habitat requirements identified in the recovery plan were incorporated into the FEIS Although the number of sites decreased, the size of the sites increased The total acreage of habitat changed only slightly

6. Mature conifer habitat requirements did not change, but the standards and guidelines for distribution of habitat sites was revised. The required sites were remapped taking into account the new distribution guidelines and the new Spotted Owl Habitat Area (SOHA) locations As a result, the number of sites to be managed on suitable timber land changed

7. Management Requirements for the mink (mature riparian habitat), mountain quail (grass-forb habitat), and sharp-shinned hawk (representing a guild of species dependent on mature deciduous-mix habitat) are not included in the FEIS. An assessment of these species determined that habitat is not a limiting factor for population viability during the plan period The species were also not included as Management Indicator Species (MIS) because their populations are not expected to be sensitive to the effects of forest management activities

8. Eligibility studies for potential Wild and Scenic rivers were completed for five additional rivers

Changes to Alternative E (Preferred Alternative):

1. Increased emphasis was placed on protection and enhancement of anadromous fish habitat and on water quality in municipal watersheds The percentage of the riparian zone protected by streamside buffers was increased on average from 50% to 75% on lands managed for timber. The largest increase in buffers occurs along Class I and II streams The yearly amount of fish habitat enhancement projects was increased substantially. The amount of land that may be harvested in a municipal watershed each decade was reduced from 20% to 15%.

2. As a result of public comments, more emphasis was given to maintaining current timber harvest levels to benefit local communities. The percent of suitable timber acres managed intensively on 60 to 80-year rotations, rather than 100-year rotations, was increased from 26% to 74% Other tradeoffs were made to wildlife habitats and undeveloped recreation areas to keep the timber harvest levels close to current.

3 Management emphasis for cavity excavator habitat was reduced The Preferred Alternative provides for maintaining 40% of the biological potential by subbasin rather than 50%.

4 The core habitat area to be managed for pileated woodpeckers, an indicator species for mature conifer habitat, was increased from 400 acres to 500 acres to reflect the findings of recent research conducted on the Coast Range

5. The long-rotation management of deciduous-mix stands was felt to be unnecessary to maintain sufficient habitat for the guild of species that uses it. The new management objective is to maintain about 5% of the Forest in deciduous-mix habitat well distributed by age and location to maintain diversity No special timber management is used to provide this condition for the next 10 years

6 Management emphasis on providing permanent meadows for elk was reduced The amount of new meadows created over a 50-year period was reduced from 2,000 to 1,000 acres. Practices, such as forage seeding, timber harvest distribution and cooperation with Oregon Department of Fish and Wildlife on elk transplant efforts, are adopted to maintain a stable elk population

7. The alternative was redesigned to include an integrated recreation strategy consisting of provision of high quality destination sites in a coastal setting, "day-use" facilities that link coastal and inland areas, and opportunities for recreation in a forested setting close to urban areas in the Willamette Valley.

8 The size of the Drift Creek Adjacent area to be managed as an unroaded, undeveloped area was reduced from about 6,700 acres to 2,600 acres The area to be managed as undeveloped includes a SOHA and overlaps about 2,000 acres of RARE II land.

9. The sizes of two proposed Special Interest Areas--Cape Perpetua and Kentucky Falls--are increased by a total of 1,160 acres

10 Three potential Research Natural Areas outside the Oregon Dunes NRA, are recommended for establishment

11. One thousand acres of old-growth groves outside of areas unsuitable for timber production (e.g., Wildernesses and SOHAs) are maintained for amenity values

12 A higher level of scenic protection is given to three major travelways, Highways 34, 18 and 126, to provide retention of the natural scenery in the foreground In addition, 15 of the least visually sensitive routes receive slightly more protection.

AFFECTED ENVIRONMENT

The Siuslaw National Forest is located in the Coast Range of western Oregon adjacent to the Pacific Ocean. The Forest contains over 630,000 acres extending south from Tillamook to Coos Bay Primarily steep forest land covers some 604,000 acres, while 27,000 acres of sand dunes and wetlands stretch along the coast from Heceta Head, south of Yachats, to Coos Bay

The Forest Supervisor's Office is in Corvallis, Oregon Ranger District offices are in Hebo (Hebo Ranger District), Alsea (Alsea Ranger District), Waldport (Waldport Ranger District), Mapleton (Mapleton Ranger District), and Reedsport (Oregon Dunes National Recreation Area) These locations are shown on the vicinity map (Frontispiece)

Corvallis, a city of approximately 40,000 people, and Eugene-Springfield, with a population of about 147,000, lie just east of the Forest To the west are coastal cities and towns of from 2,500 to 14,000 people Smaller communities are found along main roads throughout the Forest. In 1985, about 654,500 people lived in the eight-county area of Benton, Coos, Douglas, Lane, Lincoln, Polk, Tillamook, and Yamhill Counties, which make up the zone of influence where Forest resources are primarily used Communities along the coastal strip rely on fishing, tourism, and wood products, other communities are closely tied to the timber uses and amenities associated with forested land in western Oregon. Many of these communities depend on Forest streams for their domestic water supplies

The principal resources found on the Forest are trees, habitat for wildlife and anadromous fish, clean water, unique scenery, and recreation along the Oregon coast The Siuslaw is one of the highest producers of wood fiber of any Forest in the nation It has many areas of steeper and unstable terrain, compared to most National Forests Landslide erosion is largely responsible for the shape and character of the mountain slopes and stream systems The mild and wet climate encourages rapid plant growth, hence the presence of dense stands of tall trees, primarily conifers, and a thick undergrowth of vegetation The Forest also supports a diversity of wildlife and habitat for such threatened, endangered, or sensitive species as bald eagles, northern spotted owls, and Oregon silverspot butterflies It has the most miles of stream inhabited by anadromous fish of any Forest outside of Alaska

The Forest has a significant amount of land along the Pacific Ocean, which is a popular recreation area for people from Oregon and nearby states Popular sites include the Oregon Dunes National Recreation Area, which was visited by over 2 million people in 1985, the Cape Perpetua Scenic Area, and the Cascade Head Scenic-Research Area Three Wildernesses--Cummins Creek, Rock Creek and Drift Creek--are also located on the Forest.

The dominant employers in the area are the trade and government sectors, which accounted for about 45% of the total employment in 1987 Timber industry employment accounts for about 13% That proportion has been declining for the past several years, while trade and services are providing a greater share of local employment

ISSUES, CONCERNS, AND OPPORTUNITIES

Identification of major public issues, management concerns and resource opportunities (ICOs) began in 1979 The Forest IDT compiled a preliminary set of issues and management concerns which was sent to interested individuals, adjacent landowners, agencies, and organizations. Then, based on their comments, the IDT prepared a revised set which was subsequently approved by the Regional Forester

in August, 1980. This set has been revised as needed to keep current with public interests and changes in policies and procedures

Several issues or aspects of issues have received fresh emphasis since publication of the DEIS and Proposed Forest Plan. In addition, increased attention has surfaced related to old growth, wildlife habitat requirements, technical questions regarding timber harvest projections, and fish habitat management.

Of the 25 ICOs which were identified, the following 15 were addressed differently in the alternatives and had an influence on the design of the alternatives:

1. Timber

How much and what kind of timber will be harvested?

The primary issue for the Forest is what balance should be struck between managing the land for timber production and for other resources such as fish, wildlife, undeveloped recreation, and old growth. The timber industry is an important part of the local and regional economic base, and the Forest has supplied significant amounts of timber in the past. Public opinion is sharply divided on whether or not the timber sale levels allowed by past plans can be sustained while adequately protecting wildlife, fisheries and recreation.

On a per-acre basis, the Siuslaw is the most productive National Forest in the country. Receipts from the sale of timber have far exceeded costs for timber and road management, and the receipts provide income to local county governments. Many individuals would like the level of timber production maintained at high levels to help sustain local economies and community stability. On the other hand, several individuals and environmental groups would like the amount of timber harvest reduced to benefit wildlife, fisheries and recreation resources. Many are concerned that the long-term effect of continuing the past harvest levels will reduce site productivity and biological diversity.

Some timber interest groups wondered about the opportunity for the Siuslaw to provide enough timber during the next 10 to 20 years to make up a temporary shortage in private land supply This would mean a departure from an even flow of timber harvest from the Forest and a decline in future levels. Additionally, there is concern that the hardwood volume would not be sufficient to meet the future demands.

The responsiveness of the alternatives to this issue can be evaluated by considering the number of acres allocated to timber management (suitable timber acres), the long-term sustained yield capacity (LTSYC), the Allowable Sale Quantity (ASQ), the hardwood volume provided, and the percent of suitable acres in rotations longer than 90 years.

2. Old-Growth Stands

How much of the existing old growth will be maintained?

The future of old-growth stands on the Forest has become a very controversial issue. Many members of the public value old-growth trees and older forests for aesthetic and recreational purposes, as well as for maintenance of wildlife habitat and biological diversity Timber industry interests, however, feel enough land is already removed from timber production to provide old growth for future generations.

The current (1976) old-growth inventory indicates about 34,000 acres of old growth exists, although much of this may not qualify as old growth using the criteria considered important today. Of the existing

old growth, about 20,000 acres are reserved in designated areas, such as Wilderness, and other areas unsuitable for timber production.

The responsiveness of the alternatives to this issue can be evaluated by comparing the amount of additional old growth that would be retained through land allocations.

3. Watersheds

How will the land be managed to maintain stable watershed conditions and meet state water quality standards?

Water quality for domestic use is an important issue to many of the residents and municipalities dependent upon Forest watersheds Water quality and watershed stability are also critical to the maintenance of fish habitat, both in Forest streams and in estuaries. Watershed stability and water quality are primarily influenced by timber harvesting and road construction.

All alternatives are designed to meet water quality standards established by the Clean Water Act of 1977. Management activities are governed by standards and guidelines, including Best Management Practices (BMPs) that are specifically designed to protect water quality. A discussion of the BMP process and practices is provided in the FEIS, Appendix J

The issue is how best to manage the watersheds for stability and to meet water quality standards Several management practices are available, such as leaving vegetation on steep slopes, maintaining shading vegetation along streams, and limiting the amount of harvested area in a watershed each decade The watershed issue is resolved primarily by applying different levels of these protective measures in the alternatives, including a minimum level maintained in all

The key indicators for this issue are the estimated number of landslides associated with timber harvesting, estimated amount of sediment produced, timber harvest limits by watershed and amount of protection given to municipal watersheds

4. Fish Habitat

What quantity and quality of anadromous fish habitat will be provided?

The commercial fishing industry, anglers, resource management agencies, and the public want maintenance of productive fish habitats in Forest streams and in the estuaries into which the streams flow. The Forest covers portions of five of the seven coastal Oregon watersheds producing large numbers of anadromous fish Twelve hundred miles of perennial stream provide spawning and rearing habitat for salmon, steelhead, and sea-run cutthroat trout An additional 2,000 miles of perennial streams and 5,000 miles of intermittent streams directly influence the downstream habitats of anadromous fish.

Water temperature, sedimentation and presence of large woody debris are important to fish habitat; all may be affected by timber harvest activities Many environmental groups and individuals feel timber harvest and road building activities should be reduced to ensure protection of fish habitat. Others feel fish habitat may be protected without reductions in harvest levels.

Indicators that vary by alternative include the general watershed protection indicators as well as the amount of protection given unstable slopes and riparian areas, and the conditions of fish habitat measured by an index (Coho Smolt Habitat Capability Index, CSHCI) of numbers of young anadromous fish.

5. Wildlife and Threatened and Endangered Species Habitat

How much habitat will be provided for wildlife species, and how and where will these habitats be managed?

The Forest is inhabited by more than 300 species of wildlife, including five threatened or endangered species The regulations developed for forest planning (36 CFR 219) require that National Forests provide habitat suitable for maintaining viable populations of wildlife The Endangered Species Act requires that actions be taken to facilitate the recovery of the five federally-listed T&E species on the Forest.

Wildlife habitats are closely related to the management of other resources Some wildlife, such as elk and deer, benefit from forage areas created by timber harvest units; other species, such as northern spotted owl use mature and old-growth forests and can be adversely affected by harvests. Areas unsuitable for timber management, such as Wilderness, Special Interest Areas, and undeveloped areas, provide habitats for species that use mature or older forest habitats.

Many individuals are concerned that the Forest is setting aside more areas of the Forest than necessary to meet species' needs. Others are concerned that the current level of timber harvests are having long-term adverse effects on wildlife populations

Indicator species, species whose population changes are believed to indicate the effects of management activities on a habitat, have been identified for habitat that is limited on the Forest These include the spotted owl for old growth, marten and pileated woodpecker for mature conifer, elk for big game conditions, and all T&E species

The responsiveness of the alternatives to this issue can be evaluated by comparing the habitats maintained for indicator species and the total acres of habitat improvements planned

6. Recreation

What diversity of recreation opportunities will be provided?

The Forest can provide a range of recreation opportunities from developed sites, (e g., campgrounds) to undeveloped areas for dispersed recreation Because of its location at the forest-ocean interface, the Siuslaw has a unique potential to provide a variety of opportunities that take advantage of the present developed sites on the Coast and proximity to major urban areas of the Willamette Valley

Demand in this region for undeveloped recreation areas, categorized as semiprimitive nonmotorized (SPNM), is growing most rapidly of all types, although total demand for developed recreation will continue to be the highest The Forest can meet the anticipated demand for developed opportunities with minimal effects on other resources, but there is a need to provide more opportunities for recreation in an undeveloped setting with little evidence of human disturbance. Capacity for SPNM recreation can be increased quickly by developing trails in undeveloped areas to increase accessibility to steep and densely vegetated areas

Many environmental groups feel the Forest should be placing less emphasis on timber production and more emphasis on noncommodity resources Timber interests, on the other hand, feel the Siuslaw should be managed with a strong emphasis on timber since it has some of the most productive timber growing land in the country.

The demand for semiprimitive motorized (SPM) recreation opportunities, (i.e., opportunities for use of off-road vehicles (ORVs) in a relatively primitive setting), is higher than the supply capability on the Forest and is expected to increase Only a few areas offer suitable places for ORV use--primarily the sand areas on the Oregon Dunes National Recreation Area, Sand Lake and Sutton area.

The recreation issue is treated as four separate issues: developed recreation, undeveloped area opportunities (Issue 11), semiprimitive motorized, and Special Interest Areas (Issue 7) The key indicator of responsiveness to the issue is the measure of SPNM recreation provided, since the amount of developed recreation and SPM offered is the same in all alternatives

7. Special Interest Areas

How much of the Forest will be managed as Special Interest Areas?

Special Interest Areas (SIAs) are managed to preserve unusual scenic, historic, research, or other special values The Forest has two designated SIAs--Cape Perpetua (1,000 acres) and Marys Peak (924 acres)-- and has identified two potential areas: Mt. Hebo (1,680 acres) and Kentucky Falls (2,850 acres) There is potential to enlarge the Cape Perpetua SIA to 2,780 acres

Because SIAs must be managed in nearly natural conditions, designation of these areas affects several other resources. Timber production is excluded and recreation developments must not detract from the unique features of the area In addition to the special values protected, these areas provide habitat for certain species of wildlife, and offer protection to fish habitats, watersheds, and scenery. Designation of all potential SIAs received widespread support in comments on the DEIS.

The key indicator of responsiveness to this issue is the number and size of SIAs recommended for designation.

8. Recreation Areas--Sutton and Sand Lake areas

What mix of recreation opportunities should be provided in the Sutton and Sand Lake areas and will it be compatible with wildlife and plant habitats?

The Sutton and Sand Lake areas consist primarily of sand beaches and dunes offering a variety of coastal recreation opportunities Portions of the areas are presently open to ORVs Sand areas available for ORVs are limited on the Forest and in high demand Both Sutton and Sand Lake have special natural features - including habitats for some threatened, endangered or sensitive species of birds and plants. A portion of the Sand Lake area contains a potential Research Natural Area. Management of certain portions of these areas for recreation, particularly ORV use, could adversely affect plant and wildlife habitat.

Future management of the Sutton area is primarily a local concern, but highly controversial Many people would like to see the area undeveloped to discourage recreational use, especially ORVs Others want more sand areas available for ORV use

Management direction for Sand Lake is incorporated from the 1980 Sand Lake Management Plan, but the size of the area to be managed for recreation purposes is an issue

The key indicators for this issue are for Sutton, the areas open to ORV use and the level of recreation development planned; and for Sand Lake, the size of area managed for recreation

9. Visual Quality

Which areas of the Forest will be managed to maintain or enhance visual quality?

Landscapes seen from areas - such as roads, rivers, or developed recreation sites - that are heavily used by the public are called scenic viewsheds. Viewsheds are more sensitive than other areas because the scenic quality significantly affects the recreational experience of those viewing it. Approximately 13% of the Forest (located in 33 viewsheds) is considered to be moderately to highly sensitive. Without careful design of management activities in these viewsheds, the visual quality could be diminished.

Protecting visual quality requires special management of timber activities, including design of the size, shape and timing of timber harvest units. This may reduce timber outputs and increase management costs. However, since the intensity of ground-disturbing activities is reduced, such protection is likely to benefit fish, wildlife, and recreation.

The key indicator of response to this issue is the percent of viewshed acres to be managed for full or partial retention of the natural landscape

10. Wilderness

How will the three Wildernesses on the Forest be managed?

In 1984, Congress established three Wildernesses on the Forest: Cummins Creek, Drift Creek, and Rock Creek. The areas do not possess 'Primitive' characteristics as they are either too small or too close to roads. Visitor use is severely restricted due to dense brushy conditions, and only 11 miles of trail exist on two of the Wildernesses

Many local environmental groups would like trails developed to allow public enjoyment of the areas Some feel the Wildernesses were established primarily for protection of fish habitat and natural ecosystems and do not want accessibility improved.

Trail design and location can influence visitor use patterns in Wildernesses and be used to increase present capacity for SPNM opportunities The level of trail management planned for the Wildernesses is a key indicator of responsiveness to this issue

11. Undeveloped Areas

Which areas of the Forest will be managed as undeveloped recreation areas?

Undeveloped areas do not contain roads, are essentially natural, and are 2,500 acres or larger. These include: 1) the seven areas identified as "roadless" in the Roadless Area Review and Evaluation II (RARE II) process (46,800 acres), 2) some areas with roads or harvested units adjacent to the RARE II areas which could revert to an undeveloped condition if left unmanaged (4,400 acres), and 3) an undeveloped area around the North Fork of the Smith River (5,800 acres)

The issue concerns whether to make these areas available for timber production or maintain them as unroaded, undeveloped areas. Timber interests feel the Forest has enough undeveloped areas in Wilderness and in the Oregon Dunes NRA to meet future demands and removing more land from timber management is unjustified Other individuals feel that unroaded opportunities are dwindling due to current high levels of timber harvest and would like most unroaded areas to remain undeveloped for future generations

Four of the undeveloped areas are on the Oregon Dunes NRA. These areas will be maintained in undeveloped condition in all Plan alternatives, and will be evaluated for future management during review of the Oregon Dunes NRA Management Plan, scheduled to occur within 3 years of Forest Plan implementation.

The key indicator for responsiveness to this issue is the number of acres outside the Oregon Dunes NRA maintained in unroaded condition This is reflected in the number of acres allocated to the 'undeveloped' management area

12. Research Opportunities

Research Natural Areas (RNAs) are physical or biological areas maintained in a natural condition for the purpose of conducting scientific research. They provide baseline data for comparison to ecosystems which have been altered by human activities. To maintain the natural conditions necessary for RNAs, developments such as roads and timber harvest are prohibited. These areas provide habitat for some wildlife and fish, but are too small to have major effects on other resources

Two RNAs, Flynn Creek and Neskowin Crest, were established by the Chief of the Forest Service The Pacific Northwest Experiment Station has identified five other areas which would fulfill national RNA needs. Sand Lake, Cummins/Gwynn Creeks, Reneke Creek, Threemile Creek, and Tenmile Creek Recommendations for the latter two potential RNAs on the Oregon Dunes will be deferred until the Oregon Dunes Management Plan is reviewed The responsiveness of the alternatives to this issue is reflected by the number of the three remaining potential areas that are recommended for RNA establishment

13. Minerals and Energy

How much and where will mineral resources be developed and what management direction is needed for leasing and development of energy minerals?

The issue concerns the amount of land that would be available to oil and gas leasing and for common mineral extraction There are no known locatable minerals (hard rock) on the Forest and few leases for oil and gas No significant amount of oil and gas exploration has taken place, and none is foreseen in the immediate future Rock and gravel for road surfacing is available from 22 quarries.

The key indicator for this issue is the amount of land available with few restrictions for oil and gas leasing and accessible for mineral extraction.

14. Local Communities

How will the management of Forest resources affect local communities?

Forest management activities and resulting outputs influence job opportunities, incomes, and the quality of life of residents in nearby communities There is concern that changes in Forest outputs and activities may adversely affect the local economies and community stability.

Siuslaw National Forest resources support several local industries including lumber and wood products, commercial fishing, and tourism The current levels of timber harvest, wildlife and fish populations, and recreational use provide an estimated 8,500 jobs in the eight counties where the Forest is located

In addition to providing resources for local industries, 25% of receipts from the sale of Forest resources is paid to counties to finance schools and roads, and a portion of the operating expenses for the Forest is spent locally on supplies, services, and salaries

The Forest also has noncommodity resources that are important to local residents, such as clean water, scenery, and open space. Many residents value the opportunity to use the Forest for firewood cutting, hunting, fishing, and recreation.

The responsiveness of the alternatives to this issue can be evaluated by considering the changes in employment and payments to local governments

15. Economic Value

What economic value will Forest resources generate in the future?

There is national and local concern about the economic value of Forest outputs, in terms of net receipts to the Forest Service as well as long-term investment value. This issue involves both the amount of money Forest resources generate and how efficiently those resources are produced

Because most of the net monetary value of the Siuslaw National Forest comes from the timber resource, management objectives which would significantly change the level of timber harvest would also significantly change the overall present net value (PNV) of the Forest. In addition, changes in the types of timber activities will influence efficiency of Forest management. In general, timber has a high monetary value and, on an economic basis, out-competes other resources.

The key indicators of the responsiveness of alternatives to this issue are the PNV, which is a relative indicator of economic efficiency, and net receipts (total cash flow)

ALTERNATIVES

Development of Alternatives

To resolve the planning issues, the IDT gathered current information about pertinent resources, analyzed the management situation, and formulated a set of alternatives Ten alternatives were developed encompassing a full range of resource outputs and environmental effects Each alternative is a combination of management areas with unique sets of management practices and scheduled activities which result in a unique combination of resource outputs, land uses and environmental conditions. Several management areas emphasize protection of fish and wildlife habitat and naturally occurring ecosystems; others emphasize sustained timber yields or various types of recreation and research opportunities Each alternative distributes Forest lands to management areas in different ways. A brief description of the management areas is provided in this summary, and the acres assigned to each by alternative is shown in Table S-1

Selection of the Preferred Alternative (Alternative E) was made after careful analysis of the tradeoffs among resource outputs, environmental effects and economic consequences. Revisions were made to the Preferred Alternative in the DEIS to respond to public comment concerning major issues and technical problems. The Preferred Alternative in the FEIS is that alternative which best maximizes the net public benefits in an environmentally sound manner.

Management Requirements

The National Forest Management Act of 1976 and its implementing regulations [36 CFR 219] provide direction for the forest planning process. Management Requirements (MRs) in the regulations specify minimum specific requirements for resource protection and management of the timber resource. The regulations are legal requirements that must be met during forest plan implementation At the Forest level, the MRs are incorporated into the planning process through the development of management standards and guidelines and by selection of management practices designed to meet the MRs All of the alternatives, except Alternative NC, meet the MRs.

There are several requirements that the Forest must meet which did not require special analysis Examples are protection of air quality, cultural resources, road design, and diversity. These requirements are addressed through standards and guidelines that apply to all alternatives

Some Management Requirements needed special analysis and had significant interactions with other resources These are the requirements for maintenance of water quality and riparian areas along perennial streams, those for mature conifer wildlife habitat, and those for the maintenance of viable populations of northern spotted owls.

The primary activities that affect water quality are timber harvesting, slash burning, and road construction Management practices selected to protect soil and water resources also protect fish habitats and riparian habitat adjacent to streams. The selected practices are:

1. Leaving vegetation on slopes judged to have a high risk of landslides.

2 Leaving vegetation along streams to provide shade sufficient to maintain water temperatures within state standards

3 Limiting timber harvests to 30% or less of the Forest land in any third- or fourth-order basin to minimize sedimentation and degradation of stream structure

Habitat requirements for indicator species of mature conifer were identified to determine the type of habitat used, the size of habitat needed, and the dispersal distance between habitats To ensure viability of the dependent species, a network of habitat areas was identified. The Forest chose to provide mature conifer habitat by managing timber stands on long rotations of 100 years, i e , the stands are harvested after 100 years of age. To minimize the effects on the timber program, habitat areas were overlapped with other wildlife habitats and lands unsuitable for timber production wherever possible

Habitat requirements of northern spotted owls were described in the Final Supplement to the EIS for an Amendment to the Pacific Northwest Regional Guide of 1988 The December 1988 Record of Decision for the Supplement changed the direction for the Siuslaw from the original direction in the Regional Guide so that Spotted Owl Habitat Areas (SOHAs) are now 2,000 acres In accordance with the new standards and guidelines for size and spacing of SOHAs, a new network of 22 SOHAs was located outside reserved areas (Wildernesses, Cascade Head Scenic-Research Area and Cascade Head Experimental Forest) The Forest chose to preserve the needed habitat areas, rather than manage them on long timber rotations of greater than 200 years

Description of the Alternatives

Alternative NC

Alternative NC is the "No Change" alternative requested by the Northwest Forest Resource Council after the DEIS was released The alternative was developed to represent the existing Timber Resource Plan (TRP) completed in 1979 and amended in 1984 to comply with legislation that established Wildernesses on the Forest. The purpose of the TRP was to determine the potential yield of harvestable timber on the Forest. The TRP was neither an integrated management nor an integrated resource plan and consequently did not address all resource demands and uses.

Timber would be managed on about 508,000 acres (80%) of the Forest, and regeneration havests and commercial thinning would occur on about 12,000 acres per year in the 1st decade. This would provide an average annual potential yield of 92 MMCF (438 MMBF) in the 1st decade, which is 30% higher than the average harvested on the Forest during 1984-1988

The NFMA regulations, including Management Requirements, would not all be met Management practices to protect water quality would not be sufficient to meet state water quality standards. Timber would be harvested on some slopes with high risk of landslides Harvests would be restricted on only about 19,000 acres of riparian areas By the 5th decade, fish habitat would be about 69% below present capability levels and would vary widely across the Forest. Municipal watersheds would not receive special protection

Not all wildlife populations would be provided habitat needed to maintain population viability. Populations of spotted owls and species associated with mature conifer forests would not be viable past the 5th decade About 13,000 acres of old-growth habitat would remain undisturbed to protect spotted owl populations on an interim basis, however, full timber yields from these lands were included in the potential timber yield objectives

No undeveloped areas outside the Oregon Dunes NRA would be maintained. About 1,500 acres around Cape Perpetua and Marys Peak would be managed as Special Interest Areas Two Research Natural Areas would continue to exist and one potential area, Reneke Creek, would be proposed for establishment

Forest Service receipts and payments to counties would increase twofold in the 1st decade. Employment opportunities would also increase, most noticeably in local communities dependent on lumber and wood products

Alternative NC would transform the Forest into a highly managed forest which would resemble commercial timberland. Visitors in the year 2000 would see many stands of young trees and evidence of recent logging activities would be widespread

Alternative A

Alternative A is the "No Action" alternative It would continue the current course of action under approved unit management plans and other resource plans, modified to meet Management Requirements It emphasizes wood production and provides for high levels of habitat for bald eagles and elk.

Timber would be managed on about 381,000 acres (60%) of the Forest, and about 70% of the land suitable for timber production would be managed on timber rotations of 80 years or less The average annual Allowable Sale Quantity (ASQ) would be 65.9 MMCF (351 MMBF), which is 21% higher than

the average amount harvested over the past 10 years. Assuming that all the ASQ would be harvested and the price of timber would increase 1%/year, Forest Service receipts and payments to the counties would increase 49% in the 1st decade Employment opportunities would also increase, costs to operate the Forest would increase 19%, and PNV of the Forest would be high ($2 1 billion)

Management Requirements would maintain water quality to meet state standards and maintain viable populations of fish and wildlife Elk habitat capability would decline 19% by the 5th decade, and habitat for bald eagles and other T&E species would remain the same or increase. Some timber would be harvested on lands with old-growth stands and land with a relatively high risk of landslides. Habitat for spotted owls would be maintained so that the species would continue to exist, but capability levels would be 63% of present

About 2,800 acres of riparian area would be harvested every decade and some slopes prone to landslides would be logged By the 5th decade, fish habitat would be 16% below present levels

There would be no undeveloped areas other than the four on the Oregon Dunes NRA, and only 23% of the demand for semiprimitive nonmotorized (SPNM) recreation would be met in the 5th decade No additional SIAs would be designated, the two existing SIAs would be maintained Scenery along about two-thirds of visually important roads would be protected

Alternative A would continue the transformation of the Forest into an intensively managed forest area which, from a vista point, would have a patchwork appearance A visitor in the year 2000 would see many stands of young trees, and an intensive program of improving the stands to increase timber yields

Alternative B

Alternative B emphasizes production of wood products Wildlife, water, and fish resources would be managed at levels commensurate with the high timber production, but would at least comply with Management Requirements

Timber would be managed on about 403,000 acres (64%) of the Forest, and about 89% of the land suitable for timber production would be managed on rotations of 80 years or less. The annual ASQ would be 69 1 MMCF (381 MMBF), which is 31% higher than the average harvested in the last 10 years. Assuming that all the ASQ would be harvested and the price of timber would increase 1%/year, Forest Service receipts and payments to counties would increase 70%. Employment opportunities would also increase, costs to operate the Forest would increase by 18%, and the PNV of the Forest would be high ($2 2 billion)

MRs would maintain water quality in compliance with state standards, as well as viable populations of fish and wildlife Timber would be harvested on over 4,000 acres of riparian area each decade and on some slopes prone to landslides The amount of fish habitat would be 27% below present levels Elk habitat capability would decline 29% by the 5th decade By the 5th decade, 59% of the existing habitat capability for spotted owls would remain, and relatively small amounts of mature deciduous-mix habitat would be available

No undeveloped areas would be reserved outside the Oregon Dunes NRA, and 30% of the demand for semiprimitive nonmotorized recreation would be met in the 5th decade The Mt. Hebo SIA would be designated, and the two existing SIAs would be maintained There would be no protection of the scenery along visually important roads, including Highway 101.

Alternative B would accelerate the transformation of the Forest into an intensively managed forest which, from a vista point, would have a patchwork appearance. A visitor in the year 2000 would see many stands of young trees, and an intensive program of stand improvement to increase timber yields

Alternative B Departure (RPA)

Alternative B(Dep) attempts to meet the RPA program targets and the timber objectives of the Oregon Department of Forestry, while emphasizing economic efficiency It would produce large amounts of wood by departing from a nondeclining flow harvest schedule. This alternative would meet the RPA timber goal for the 1st decade, and could meet some, but not all, other RPA goals. Its objectives are the same as for Alternative B, except that a departure schedule for timber is added Only the aspects of Alternative B(Dep) that vary from Alternative B are discussed here.

The annual ASQ would be 79.8 MMCF (439 MMBF), which is 51% higher than the amount harvested in the last 10 years. Eighty-one percent of the land suitable for timber production would be managed on rotations of 80 years or less Assuming that the price of timber would increase 1%/year, Forest Service receipts, payments to counties, and local employment would nearly double by the 1st decade These would drop commensurate with the decline in timber sales in the 2nd decade. Costs to operate the Forest would increase 22% and PNV would be very high ($2 3 billion).

MRs would maintain water quality to meet state water quality standards and viable populations of fish and wildlife. Timber would be harvested on about 6,400 acres of riparian areas per decade. Fish habitat would be 37% below existing levels.

Recreational opportunities and scenic quality would be similar to those in Alternative B

This alternative would noticeably transform the Forest into a managed forest, which, from a vista point, would have an extensive patchwork appearance. In the year 2000, the Forest would be dominated by signs of logging during the previous decade

Alternative C

Alternative C emphasizes production of wood while providing habitat for big game and a variety of recreational opportunities Timber harvest would be distributed across the Forest and through time to provide a steady supply of forage for big game in clearcut areas. This would be supplemented by forage in newly created meadows

Timber would be managed on about 388,000 acres (61%) of the Forest, and 81% of the land suitable for timber production would be managed on rotations of 80 years or less The annual ASQ would be 66 5 MMCF (365 MMBF), which is 26% higher than the average harvested on the Forest in the past 10 years. Assuming that all the ASQ would be harvested and the price of timber would increase 1%/year, Forest Service receipts and payments to counties would increase 65% by the 1st decade Local employment opportunities would also increase, as would costs to operate the Forest (by 20%). The PNV would be high ($2.2 billion).

MRs would maintain water quality to meet state water quality standards and viable populations of fish and wildlife Timber would be harvested on over 3,900 acres of riparian area each decade, mostly to provide forage for elk Additionally, about 1,700 acres of permanent meadows would be created for big game Fish habitat would be 23% below existing levels and elk habitat capability would increase 29% by the 5th decade. Some timber would be harvested on lands with old-growth stands. Spotted owl

habitat would be maintained at the MR level, and habitat capability would be 61% of present levels by the 5th decade.

Two undeveloped areas outside the ODNRA would be maintained, and trail development for SPNM opportunities would allow the Forest to meet demand until the 2nd decade and 46% of the demand in the 5th decade Two additional SIAs would be designated (Kentucky Falls and Mt Hebo); the two existing SIAs would be maintained. Scenery along more than one-third of the visually important roads would be partially or fully protected

Alternative C would continue the transformation of the Forest into a managed forest area, which, from a vista point, would have a patchwork appearance A visitor in the year 2000 would see many stands of young trees, and an intensive program of improving the stands to increase timber yields

Alternative D

Alternative D emphasizes production of major commodities with market value, such as wood products, commercial fish (particularly coho salmon) and developed recreational activities for which a fee is paid

Timber would be managed on about 341,000 acres (54%) of the Forest, and 84% of the land suitable for timber production would be managed on rotations of 80 years or less The annual ASQ would be 60 6 MMCF (332 MMBF), which is 15% higher than the average harvested in the last 10 years Assuming that all the ASQ would be harvested and the price of timber would increase 1%/year, Forest Service receipts and payments to counties would increase 49% Employment opportunities would also increase, costs to operate the Forest would increase 12%, and PNV of the Forest would be $2 0 billion.

MRs would maintain water quality in compliance with state standards, as well as viable populations of fish and wildlife All riparian areas, unstable slopes, and intermittent streams in prime coho salmon habitat areas, are protected None of the riparian areas would be harvested After the 5th decade, prime salmon area habitat would be 5% above existing capability, although Forest-wide, the amount of habitat would be similar to existing levels.

Some timber would be harvested on lands with old growth stands, and spotted owl habitat capability would be maintained at 64% of present levels by the 5th decade. Elk production would decrease 21% below present levels A small amount of mature deciduous habitat would be available to wildlife.

No undeveloped areas would be reserved outside the Oregon Dunes NRA, and opportunities for SPNM recreation would fall below demand during the 1st decade The two existing Special Interest Areas would be maintained; no additional SIAs would be designated Scenery along Highway 101 would be protected, but no other protection would be provided

Alternative D would continue the transformation of the Forest into a managed forest which, from a vista point, would have a patchwork appearance A visitor in the year 2000 would see many stands of young trees, and an intensive program of improving the stands to increase timber yields.

Alternative E (Preferred Alternative)

Alternative E, the Preferred Alternative, emphasizes anadromous fish habitats, coastal recreation, high quality drinking water, and stable supplies of timber. Adequate levels of habitat are maintained to ensure viability of wildlife populations

Timber would be managed on about 357,000 acres (56%) of the Forest, and 26% of the suitable timber land would be harvested on rotations of 90 years or longer to provide desired wildlife habitat. The annual ASQ would be 61 2 MMCF (332 MMBF), which is 15% higher than the average harvested in the last 10 years. Assuming that all the ASQ would be harvested and the price of timber would increase 1%/year, Forest Service receipts and payments to counties would increase 48% in the 1st decade. Employment opportunities would also increase, costs to operate the Forest would increase 17%, and the PNV of the Forest would be $2.0 billion

About 1,300 acres of riparian areas would be harvested each decade and a few slopes prone to landslide would be harvested. In the 5th decade, fish habitat would average 8% below present levels. Water quality would be maintained to meet state water quality standards.

MRs would maintain viable populations of wildlife. Some timber would be harvested on lands with old-growth stands. Spotted owl habitat capability would be 71% of the present level by the 5th decade Elk habitat capability would decrease 7% below present levels.

Two undeveloped areas would be reserved outside the Oregon Dunes NRA, and a moderately high level of trail development would occur Demand for SPNM opportunities would exceed supply in the 2nd decade; opportunities would meet 40% of the demand by the 5th decade. Two additional SIAs would be designated (Kentucky Falls and Mt. Hebo), and the existing Cape Perpetua SIA would be enlarged. Some old-growth groves (about 1,000 acres) would be maintained for amenity value in areas accessible to the public for recreational purposes.

Scenery along over one-half of the visually important roads would be partially or fully protected All potential Research Natural Areas outside the Oregon Dunes NRA would be proposed for future establishment.

Alternative E would continue transformation of part of the Forest into a managed forest area which, from a vista point, would have a patchwork appearance. To a visitor in the year 2000, large areas on the Forest would appear natural.

Alternative F

Alternative F would provide a range of recreational uses and opportunities while emphasizing habitat for fish and nongame wildlife, protection of scenic resources, and production of a moderate amount of timber.

Timber would be managed on about 314,000 acres (50%) of the Forest, and 34% of the land suitable for timber production would be managed on rotations of 90 years or more to provide desired habitat for wildlife. The annual ASQ would be 52.6 MMCF (288 MMBF), which is 1% lower than the average harvested in the last 10 years Assuming that all the ASQ would be harvested and the price of timber would increase 1%/year, Forest Service receipts and payments to counties would increase 25% in the 1st decade Employment opportunities would remain the same as now, costs to operate the Forest would decrease 7%, and PNV of the Forest would be $1 8 billion.

MRs would maintain water quality as well as viable populations of wildlife. None of the riparian areas would be harvested, and slopes prone to landslides would be well protected, resulting in fish habitat 2% above present levels by the 5th decade. Elk habitat capability would decline 18% by the 5th decade. Some timber would be harvested on lands with old-growth stands Spotted owl habitat capability would be maintained at 75% of present levels.

Three undeveloped areas would be reserved outside the Oregon Dunes NRA, and much new trail development is planned About 65% of the demand for semiprimitive nonmotorized recreation would be met in the 5th decade. Two additional SIAs would be designated (Kentucky Falls and Mt. Hebo); the two existing SIAs would be maintained. Scenery along over 80% of the visually important roads would be partially or fully protected

Alternative F would moderate transformation of the Forest into a patchwork appearance To a visitor in the year 2000, the Forest would appear more natural than today

Alternative G

Alternative G is designed to enhance resources that do not have a direct market value, such as water quality, fish, wildlife, dispersed recreation, and scenery. High levels of nongame wildlife habitat and moderate levels of big game habitat would be provided

Timber would be managed on about 183,000 acres (29%) of the Forest, and more emphasis would be placed on managing timber on long rotations About 58% of the land suitable for timber production would be managed on rotations of 90 years or more The annual ASQ would be 28.2 MMCF (151 MMBF), which is 48% less than the average harvested in the last 10 years Assuming that all the ASQ would be harvested and the price of timber would increase 1%/year, Forest Service receipts and payments to counties would decrease 34% in the 1st decade Employment opportunities would also decrease, as would costs to operate the Forest (by 12%). The PNV of the Forest would be $1 1 billion.

None of the riparian zone would be harvested, and slopes prone to landslides would be well protected, resulting in fish habitat 7% above present levels by the 5th decade.

MRs would maintain water quality to meet state standards, as well as viable populations of wildlife Timber harvest would be scheduled to provide a steady supply of forage for big game in clearcut units This would be augmented by forage produced in newly created meadows. Elk production during the 5th decade would be slightly above present levels All old growth would be maintained, and habitat for spotted owls would provide 93% of the existing capability Large amounts of mature deciduous-mix habitat would be available to wildlife associated with this type of habitat

Three undeveloped areas would be reserved outside the Oregon Dunes NRA, and trails would be developed to the fullest extent About 76% of the demand for semiprimitive nonmotorized recreation would be met in the 5th decade Two additional SIAs would be designated (Kentucky Falls and Mt Hebo), and the two existing SIAs would be maintained Scenery along all visually important roads would be partially or fully protected.

Alternative G would reverse transformation of the Forest landscape into a managed forest To a visitor in the year 2000, large areas of the Forest would appear natural

Alternative H

Alternative H emphasizes preservation of natural systems in large areas of the Forest, to protect the habitats of nongame wildlife and fish, and to provide maximum protection of municipal watersheds There is particular emphasis on maintaining all old-growth stands and protecting watershed resources

Timber would be managed on about 133,000 acres (21%) of the Forest, and all of the land suitable for timber production would be managed on rotations of 90 years or more The annual ASQ would be 13 5 MMCF (72 MMBF), which is 75% lower than the average harvested in the last 10 years. Assuming

that all the ASQ would be harvested and the price of timber would increase 1%/year, Forest Service receipts and payments to counties would decrease 69% in the 1st decade. Employment opportunities would also decrease, as would costs to operate the Forest (by 31%). The PNV of the Forest would be $0.8 billion

None of the riparian zone would be harvested, and all slopes prone to landslides would be well-protected. Fish habitat in the 5th decade would be 10% above present levels. All watersheds used for municipal watershed supply would be closed to timber harvest and public access, except when needed to meet wildlife objectives

MRs would maintain water quality to meet state standards, as well as viable populations of wildlife. All old-growth would be protected, and habitat capability for spotted owls would be slightly above present levels. Elk habitat capability would be 18% below present levels Large amounts of mature deciduous habitat would be available for wildlife associated with this type of habitat

Four undeveloped areas would be reserved outside the Oregon Dunes NRA. Due to limited trail development in Wildernesses, only 65% of the demand for semiprimitive nonmotorized recreation opportunities would be met in the 5th decade. One additional SIA (Mt Hebo) would be designated; the Kentucky Falls SIA would be contained in one of the managed undeveloped areas. The two existing SIAs would be maintained Scenery along the 10 most visually important roads would be preserved; all others would be partially or fully protected.

Alternative H would reverse the transformation of the Forest landscape into a managed forest area To a visitor in the year 2000, large areas of the Forest would appear natural

MANAGEMENT AREAS

All lands of the Siuslaw National Forest are assigned to one of 15 Management Areas (MAs) in each alternative A MA is a category of land with capability to respond to certain issues or to meet specific management objectives The areas are not necessarily contiguous While the objectives for all MAs include some multiple uses, they often emphasize one or a few resources and therefore result in dominant use management for some areas.

Although many areas have multiple resource values, lands can logically be assigned to only one Management Area. In order to systematically assign the land base to MAs, a heirarchy was developed based on the degree of boundary definition available. For example, Wildernesses and SIAs have well-defined boundaries and acres were assigned to these MAs before acres for bald eagle habitat or timber production Where alternative design results in overlaps, the acres are assigned to the MA higher up in the heirarchy This precludes double-counting and assures that each acre will have only one set of management direction

A description of each MA follows The number of acres assigned to each MA by alternative is displayed in Table S-1

MA 1 Oregon Silverspot Butterfly Emphasis

The primary goal is to increase the number of individuals and amount of habitat for the Oregon silverspot butterfly. Management activities in the area must be compatible with the recovery of the species In some alternatives, additional goals for portions of the area are to provide visual quality, maintain

undeveloped characteristics, and protect the outstanding scenic and botanic features of a potential Special Interest Area

MA 2 Existing Old-Growth Groves and Ecosystems

The primary goal is to protect old-growth groves for aesthetic, recreational, and scientific purposes. Some of these groves will meet the Regional Guide definition of old-growth ecosystems and some will not. Management activities must not harm the groves, which are scattered unevenly across the Forest While they provide habitat for some wildlife, the groves are too small to provide suitable habitat for the spotted owl. Some old-growth stands are included in other MAs, such as Wildernesses and spotted owl habitat. This MA includes existing old-growth groves that are not within these other MAs.

MA 3 Spotted Owl Habitat Emphasis

The primary goal of this MA is to provide enough old-growth conifer habitat for nesting and foraging of spotted owls to assure the continued existence of spotted owls on the Forest. Because the spotted owl is an indicator species, an additional goal is to maintain habitat for other species dependent on old growth Much of the habitat, including some of the SOHAs, occurs in other MAs such as Wildernesses and undeveloped areas.

MA 4 Bald Eagle Habitat Emphasis

The primary goal is to provide enough nesting habitat for bald eagles to assist in the recovery of the species Like MA 3, it does not include all of the bald eagle habitat; some is included in Wildernesses, undeveloped areas, SOHAs, and other MAs

MA 5 Special Interest Area Emphasis

The primary goals are to protect the unusual natural characteristics of existing and potential Special Interest Areas, and, where appropriate, foster public use and enjoyment of these areas. In some alternatives, additional goals for some portions of the MA are to protect visual quality, protect values in a potential Research Natural Area, and provide habitat for wildlife

MA 6 Cascade Head Scenic-Research Area

The primary goal, as stated in Public Law 93-535, is "to provide present and future generations with the use and enjoyment of certain ocean headlands, rivers, streams, estuaries, and forested areas; to ensure the protection and encourage the study of significant areas for research and scientific purposes, and to promote a more sensitive relationship between humans and their environment". The MA also provides habitat for wildlife.

MA 7 Cascade Head Experimental Forest

The primary goals are to further research in the coastal spruce-hemlock forest and to serve as a demonstration area for promising techniques and principles of forest management The MA also provides habitat for a variety of wildlife

MA 8 Sand Lake Recreation Area

The primary goals are to provide a mix of recreational opportunities - emphasizing off-road vehicle use, sightseeing, camping, and picnicking - and to protect the ecological values of the beach and estuarine environments. Habitat for the bald eagle is also provided in a portion of the MA.

MA 9 Sutton Recreation Area

Like MA 8 (Sand Lake), the primary goals are to provide a mix of recreational opportunities - including off-road vehicle use, hiking, sightseeing, camping, horseback riding and picnicking - and to protect wildlife and sensitive plant habitat. In all alternatives, habitat for the bald eagle is also provided.

MA 10 Oregon Dunes National Recreation Area

The primary goals are to encourage enjoyment of the ocean shorelines, dunes, forested areas, lakes, and recreational facilities, and to conserve the scenic, scientific, historic, and wildlife values which contribute to enjoyment of the area

MA 11 Undeveloped Area Emphasis

The primary goal is to either maintain or allow reversion to undeveloped conditions. This will provide semiprimitive nonmotorized recreational opportunities and habitat for wildlife and protection of fish streams

Table S-1. Management Area Acres

MANAGEMENT AREA	ALTERNATIVE				
	NC (1)	A	B	B(DEP)	C
1 Silverspot Butterfly	0	1,926	1,926	1,926	1,926
2 Existing Old Growth	0	0	0	0	0
3 Spotted Owls	0 (2)	42,951	44,389	37,645	37,645
4 Bald Eagle	7,920 (3)	2,527	2,650	2,566	2,566
5 Special Interest Areas	1,500 (4)	2,884	1,088	4,084	4,084
6 Cascade Head Scenic-Research Area	3,932 (5)	4,787	4,787	4,787	4,787
7 Cascade Head Experimental Forest	7,958	7,210	7,210	7,210	7,210
8 Sand Lake	1,150 (6)	1,122	720	720	720
9 Sutton	2,707 (6)	2,707	2,707	2,707	2,707
10 Oregon Dunes NRA	23,693 (5)	26,513	26,513	26,513	26,513
11 Undeveloped Areas	0	0	0	7,432	7,432
12 Wilderness	21,782 (7)	22,186	22,186	22,186	22,186
13 Research Natural Areas	1,270	1,168	688	688	688
14 Scenic Viewsheds	49,165 (8)	27,418	0	19,671	19,671
15 Timber, Wildlife, Water, Fish	504,352	487,962	516,497	493,226	493,226
TOTAL	625,434	631,361	631,361	631,361	631,361

(1) Alternative NC did not define management areas Figures in this column represent the areas identified in the TRP for special management which are generally comparable to the management areas in Alternatives A through H

(2) The Wildlife Appendix to the TRP said that, on an interim basis, 13,000 acres of "prime older forest where populations of spotted owls now exist will remain undisturbed, awaiting land allocations through land management planning" However, these acres were not removed from the regulated commercial forest land base when potential yields were calculated

(3) Only one-third of this acreage (about 2,640 acres) would be suitable for bald eagle nest sites at any one time because these areas were to be managed on a 300 year rotation None of the acreage shown in the other alternatives would be harvested

Table S-1. Management Area Acres

MANAGEMENT AREA	ALTERNATIVE				
	D	E(PA)	F	G	H
1 Silverspot Butterfly	1,926	1,926	1,926	1,926	1,926
2 Existing Old Growth	0	1,000	0	16,551	11,739
3 Spotted Owls	43,971	46,512	40,771	37,958	55,621
4 Bald Eagle	2,650	2,502	2,487	6,466	12,435
5. Special Interest Areas	1,088	5,384	5,653	5,653	2,884
6 Cascade Head Scenic-Research Area	4,787	4,787	4,787	4,787	4,787
7 Cascade Head Experimental Forest	7,210	7,210	7,210	7,210	7,210
8 Sand Lake	620	991	1,122	991	991
9 Sutton	2,707	2,707	2,707	2,707	2,707
10 Oregon Dunes NRA	26,513	26,513	26,513	26,513	26,513
11 Undeveloped Areas	0	7,298	16,159	20,375	36,205
12 Wilderness	22,186	22,186	22,186	22,186	22,186
13 Research Natural Areas	928	1,408	1,168	1,408	1,408
14 Scenic Viewsheds	6,765	33,666	41,730	45,071	44,414
15 Timber, Wildlife, Water, Fish	510,010	467,271	456,942	431,559	400,335
TOTAL	631,361	631,361	631,361	631,361	631,361

(4) This is not the full acreage in the Marys Peak Special Interest Area since the TRP included some of that area in the general nonforest or meadows categories rather than here

(5) Difference in acreage is due to land acquisition since the TRP was written

(6) This area was not identified as a special management area in the TRP For purposes of comparison, the same size as Alternative A is displayed

(7) The TRP was amended for Wildernesses in Amendment 2, 8/6/84 Difference in acreage since then is due to improved mapping

(8) This figure from the TRP is not directly comparable to other viewshed figures This is because it includes some acreage of the modification visual quality objectives (VQO) in foregrounds, which the other alternatives do not, and it does not include acreage of the modification VQO in middleground, which the other alternatives do There is no way to develop a directly comparable figure

MA 12 Wildernesses

The primary goal is to preserve the wilderness character and natural conditions in each Wilderness This MA also provides opportunities for semiprimitive nonmotorized recreation, habitat for wildlife, and opportunities for research. It is managed in accordance with the Wilderness Act of 1964.

MA 13 Research Natural Areas

The primary goal is to preserve ecosystems for the study of natural systems and processes Research Natural Areas will serve as a baseline for comparison to ecosystems that have been altered through human activity. They also preserve irreplaceable genetic variation and thereby assist in maintaining threatened,
endangered and sensitive species.

MA 14 Scenic Viewshed Emphasis

The primary goal is to provide attractive scenery. The MA also has the goals of MA 15, including: timber production, maintenance of wildlife habitats; and protection of watersheds and fish habitat The MA contains some lands that are suitable for timber production and others that are not.

MA 15 Timber, Wildlife, Watershed, Fish Emphasis

The primary goals are to produce timber, provide habitat for wildlife dependent on mature conifer and meadow habitat, supply large woody debris for fish habitat, and reduce the risk of accelerated landslides and surface soil erosion The MA contains some lands that are suitable for timber production and others that are not

COMPARISON OF ALTERNATIVES

The alternatives respond to the issues differently, and as such, have different resource outputs and environmental effects, different benefits and costs, and different resource trade-offs. A comparison of the way the major resource programs are managed in each alternative is outlined below, followed by a comparison of the resource trade-offs

Resource Programs

A summary of the relative levels of resource programs in the alternatives is presented below. The specific outputs for selected indicators of responsiveness to the ICOs are shown in Table S-2. For comparison with the current situation, the levels of outputs and conditions that have occurred on average during the past 10 years are shown in a column labeled 'Existing'

Timber

Alternatives NC, A, B, B(Dep), and C have the highest Allowable Sale Quantities of all alternatives, with yields up to 92 5 MMCF/year Alternatives F, G and H would produce the least amount of timber, with ASQs of 53 MMCF or less Alternatives D and E(PA) would produce timber at levels slightly higher than past harvest levels

Watershed and Fish

Fish production is primarily affected by the amount of timber harvested and the watershed protection measures used. Alternatives F, G, and H would provide the most protection of watershed resources and result in the highest levels of fish habitat capability. Levels of protection and fish habitat would be lowest in Alternatives NC, B, B(Dep) and C Alternative E(PA) would provide a moderate amount of protection and moderate amounts of fish habitat. State water quality standards would be met in all alternatives, except Alternative NC.

Wildlife

Old-growth and mature conifer habitats decline with increased harvest levels Alternatives G and H would provide the most habitat suitable for species associated with such stands. Alternative NC would provide the least amount of old-growth habitat, because of the absence of MRs for old-growth wildlife habitat. Alternatives F and E(PA) would provide higher levels of spotted owl habitat than that required for MRs All other alternatives would meet MRs and provide sufficient habitat to sustain viable populations of spotted owls and species associated with mature conifer stands

Big game habitat is increased most by management of permanent meadows for forage and somewhat by harvest level. Alternatives C and G would provide increased habitat capability for elk These would be followed by Alternatives E(PA), NC, F, A and D, which would provide slightly less habitat capability than at present Alternatives B and B(Dep) would provide the least (about 29% less than existing).

Recreation

Alternatives F, G, and H would provide the greatest opportunities for semiprimitive nonmotorized recreation and most protection for the undeveloped areas, Alternatives NC, A, B, B(Dep), and D would provide the least. Alternatives C and E would provide relatively moderate levels of opportunities and would reserve two of the four undeveloped areas

Alternatives E(PA), F and G would reserve all four of the potential SIAs Alternatives B, B(Dep), C and H would reserve three of the four, and the remaining alternatives would reserve two.

Scenery

Preservation of natural-appearing scenery generally increases as fewer acres are harvested Management of scenic protection is necessary in alternatives with higher harvest levels and emphasis on visual objectives

Alternatives G and H would maintain the most (74%) of the viewshed acres in preservation, full or partial retention condition. Alternatives F, E(PA), A and C would maintain fewer than half (31 to 49%), while Alternatives NC, A, B, B(Dep) and D would maintain the least or none

Local Communities

Alternatives A, B, B(Dep) and C would provide the highest employment levels and the highest payments to counties; Alternatives G and H would provide the least. Alternatives D and E(PA) would provide moderate levels of both.

Economic Value

The economic value of the Forest, represented by PNV, would be highest in alternatives that emphasize timber production. Thus Alternative A, B, B(Dep), and C would have the highest PNVs, while Alternatives G and H would have the lowest. Alternatives D and E(PA) would have a relatively moderate PNV

Table S-2. Indicators of Responsiveness of Alternatives to Major ICOs

OUTPUTS/ACTIVITIES		ALTERNATIVE				
	Existing	NC (1)	A	B	B (Dep)	C
1. Timber, 1st Decade						
Suitable lands, MAcres	381	508	381	403	403	388
LTSY, MMCF		109 3	69 4	80 4	80 9	77 2
ASQ, MMCF/Yr (2)	62 4 (3)	92 5	65 9	69 1	79 8(57 5)	66 5
ASQ, MMBF/Yr	338 (3)	438	351	381	439	365
Hardwood Vol, MMCF/YR	4 9-5.4 (3)	8 5	8 5	5 8	6.5	5 3
Timber Harvest Rotation Lengths						
60-80 Year Rotations, Percent	70	78	70	89	81	81
90-100 Year Rotations, Percent	17	19	17	8	13	13
110+ Year Rotations, Percent	13	3	13	3	6	6
2. Old-Growth Stands						
Existing Maintained, MAcres						
1st Decade	34	24	27	22	22	23
5th Decade		10	21	20	21	21
3. Watersheds						
Estimated landslides, 1st Decade	79	141	92	88	106	86
Sediment, MCuYd/Yr						
1st Decade	64	101	76	71	86	71
4. Fish						
Coho Smolt Index, 5th Decade	1,019	316	858	748	640	787
% Change		-69	-16	-27	-37	-23
5. Wildlife						
Spotted Owl Habitat Areas	22	NA	22	22	22	22
Mature Conifer, MAcres						
5th Decade	221	18	110	103	102	106
Elk Index, 5th Decade	9,960	NA	8,020	7,100	7,070	12,840
6. Recreation						
Percent SPNM Recreation Demand Met, 5th Decade	Presently Met	23	23	30	30	46
7. Special Interest Areas						
Number of Areas	2	2	2	3	3	3
Thousands of Acres	2 9	1 5	2 9	2 8	2 8	5 8
9. Visual Resource						
% Viewshed acres managed for pres , full or partial retention	--	61	44	0	0	30
11. Undeveloped Areas (4)						
Number of Areas	7	4	4	4	4	6
Total area, MAcres	57	20	20	20	20	27 4

Table S-2. Indicators of Responsiveness of Alternatives to Major ICOs

OUTPUTS/ACTIVITIES	ALTERNATIVE				
	D	E(PA)	F	G	H
1. Timber, 1st Decade					
Suitable lands, MAcres	341	357	314	183	133
LTSY, MMCF	68 6	72 5	59 6	30 2	18 4
ASQ, MMCF/Yr (2)	60 6	61 2	52 6	28 2	13 5
ASQ, MMBF/Yr	332	332	288	151	72
Hardwood Vol, MMCF/YR	4 8	5 2	5 5	3 3	1 7
Timber Harvest Rotation Lengths					
60-80 Year Rotations, Percent	84	74	66	42	0
90-100 Year Rotations, Percent	7	13	21	47	55
110+ Year Rotations, Percent	9	13	13	11	45
2. Old-Growth Stands					
Existing Maintained, MAcres					
1st Decade	23	31	26	34	34
5th Decade	21	23	24	34	34
3. Watersheds					
Estimated landslides, 1st Decade	75	79	70	30	13
Sediment, MCuYd/Yr, 1st Decade	66	67	60	32	17
4. Fish					
Coho Smolt Index, 5th Decade	1,023	936	1,041	1,094	1,120
% Change	0	-8	+2	+7	+10
5. Wildlife					
Spotted Owl Habitat Areas	22	29	25	27	37
Mature Conifer, MAcres					
5th Decade	116	120	143	196	227
Elk Index, 5th Decade	7,900	9,220	8,200	10,200	8,120
6. Recreation					
Percent SPNM Recreation Demand Met, 5th Decade	23	40	65	76	65
7. Special Interest Areas					
Number of Areas	2	4	4	4	3
Thousands of Acres	1 0	7 1	7 3	7 3	4 6
9. Visual Resource					
% Viewshed acres managed for pres , full or partial retention	5	49	66	74	74
11. Undeveloped Areas (4)					
Number of Areas	4	6	7	7	8
Total area, MAcres	20	27 3	36 2	40 6	57 0

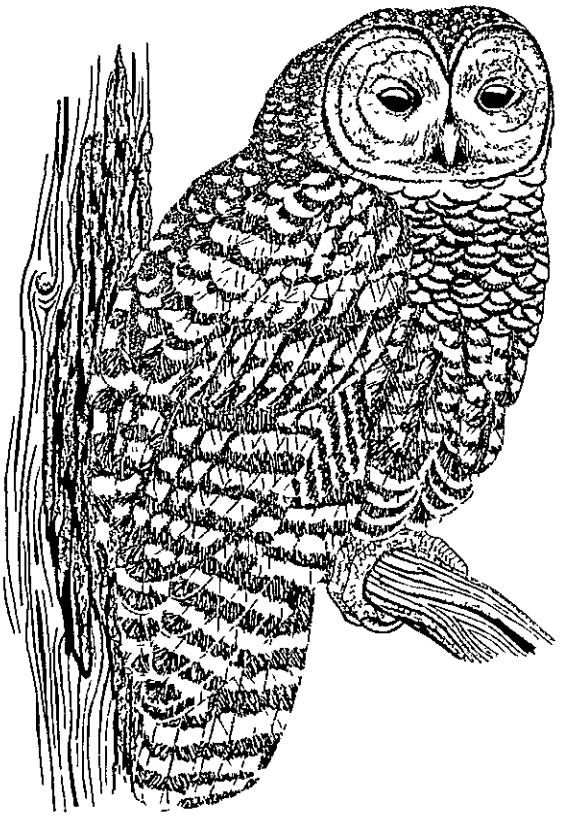
Table S-2 Cont. Indicators of Responsiveness of Alternatives to Major Issues

OUTPUTS/ACTIVITIES		ALTERNATIVE				
	Existing	NC(1)	A	B	B (Dep)	C
14. Local Communities						
Employment						
Thousands of Jobs, 1st Decade	7 8	UA	9 4	10 2	11 2	9 9
Payments to Counties						
1st Decade (MM$)	11 8	UA	17 5	20	23 2	19 5
15. Economic Values						
Present Net Value, Billion $	UA	UA	2 1	2 2	2 3	2 2

Table S-2 cont. Indicators of Responsiveness of Alternatives to Major ICOs

OUTPUTS/ACTIVITIES	ALTERNATIVE				
	D	E(PA)	F	G	H
14. Local Communities					
Employment					
Thousands of Jobs, 1st Decade	92	93	84	56	43
Payments to Counties					
1st Decade (MM$)	176	175	148	78	37
15. Economics Values					
Present Net Value (Billion $)	20	20	18	11	08

(1) Some information is unavailable (UA) for Alternative NC, value would probably be estimated between Alternatives B and B(Dep)
(2) Allowable Sale Quantity in million cubic feet (MMCF) and million board feet (MMBF) Numbers in parentheses = 5th Decade
(3) Average sold annually, 1979-88 Average sawtimber harvest= 290 MMBF/Year
(4) Includes four areas in the Oregon Dunes NRA totaling 19,990 acres



Resource Trade-Offs

An objective of the forest planning process is to provide information that helps determine which alternative provides the mix of outputs and effects that best responds to the ICOs while maximizing the net public benefit of managing the National Forest Net public benefit is the overall value to the nation of all outputs and positive effects (benefits) less all the associated Forest Service inputs and negative effects (costs), whether they can be quantitatively valued or not. Net public benefits are measured by both quantitative and qualitative criteria rather than a single measure or index such as Present Net Value (PNV). Alternatives having the highest PNV may not always provide the highest net public benefits when nonpriced benefits and costs are considered.

Alternatives differ because each responds differently to the major ICOs identified for the Forest The goal of each alternative is to enhance production of one or more resource outputs To achieve this, other resource outputs must be limited or "traded off" In Tables S-2 and S-3, key indicators are used to illustrate the degree of response of each alternative to these ICOs and the tradeoffs between resources In Table S-3, the alternatives are listed in descending order of PNV, which more directly illustrates the resource and economic trade-offs

Some groups of alternatives are similar in terms of benefits and tradeoffs involved This is because some resources, such as timber and big game habitat, are strongly complementary Nongame wildlife habitat, fish habitat, undeveloped recreation, and scenery are another group of strongly complementary resources. Alternatives NC, A, B, B(Dep), and D tend to emphasize market outputs. Alternatives F, G, and H emphasize amenity values of the Forest. Alternatives C and E(PA) provide a balance between the two types of resources.

The economic consequences of the alternatives are one component or a partial measure of net public benefits On the Siuslaw, the net economic value, net cash returns to the U S. Treasury, levels of employment and payments to counties are directly dependent on the level of timber production For example, alternatives with less timber harvest would be less expensive to implement primarily because of fewer reforestation and road costs. However, the savings of a smaller timber and road program would be more than offset by lower receipts from timber sales

The economic consequences do not include possible future mineral and energy development. These values are highly speculative because of the low potential for significant development on the Forest. The economic consequences of such unlikely developments would probably not vary significantly between alternatives

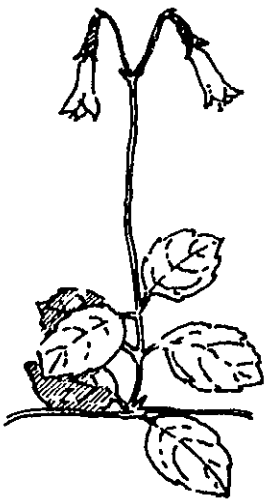


Table S-3 Comparison of Present Net Value and Resource Outputs

		ALTERNATIVES, Ranked by Decreasing PNV									
	Unit	NC	B(Dep)	B	C	A	D	E(PA)	F	G	H
Present Net Value	MM$	(1)	2,341	2,245	2,192	2,065	2,049	2,031	1,800	1,112	787
Total Costs	MM$/Yr										
1st Decade		UA	33 3	32 3	32 6	32 5	30 6	31 8	29 1	23 9	18 9
5th Decade			29 3	31 8	35 1	27 9	27 5	29 3	27 3	22 7	19 1
Nonmarket Benefits	MM$/Yr										
1st Decade		(2)	17 6	17 5	18 4	17 8	17 4	18 0	17 8	18 0	17 4
5th Decade			22 4	22 3	24 3	22 7	22 4	23 3	23 6	24 4	22 9
Timber ASQ											
1st Decade	MMCF/Yr	92 5 (3)	79 8	69 1	66 5	65 9	60 6	61 2	52 6	28 2	13 5
Lands Suitable for Timber Production		(4)									
Total Area	MAcres	508	403	403	388	381	341	357	314	183	133
Wildlife											
SOHAs	Number	(5)	22	22	22	22	22	29	25	27	37
Fish Habitat											
5th Decade	CSHCI	316	640	748	787	858	1,023	936	1,041	1,094	1,120
Recreation/SPNM											
Projected use,											
5th Decade	MRVDs	18 (6)	18	18	35 4	18	18	30 4	49 8	55 5	67 7
Undeveloped Areas	MAcres	20 0	20 0	20 0	27 4	20 0	20 0	27 3	36 2	40 6	57 0
Viewsheds Protected	Percent of Acres	(7)	0	0	30	44	5	49	66	74	74

(1) The PNV calculated for the TRP ($1,293 million) used different assumptions, so it is not comparable with Alternatives A-H The high timber output in Alternative NC would yield a high PNV if analyzed with the same assumptions as Alternatives A-H

(2) Unavailable The TRP did not estimate benefits for any resource other than timber, however, non-market benefits would probably be similar to other alternatives which emphasize timber

(3) This is the potential yield for the TRP

(4) The TRP displayed the regulated commercial forest land (542,120 ac) as the suitable acres Timber harvest activities were scheduled on only 508,034 acres

(5) Spotted Owl Habitat Areas (SOHAs) were not developed for the NC Alternative, and the number of sites identified for interim management was not available in the TRP

(6) SPNM is semiprimitive nonmotorized recreation The estimate for Alternative NC assumes the same management of roadless areas in the Oregon Dunes National Recreation Area (NRA) and the same level of trail development in Wildernesses and the Dunes roadless areas as in Alternative A.

(7) Unavailable This column shows what percentage of the total acreage of visually sensitive viewsheds on the Forest is assigned a VQO of preservation, retention, or partial retention The TRP includes the acreage of retention, partial retention, and foreground modification, but not middleground modification This means the total acreage of visually sensitive viewsheds is unknown for Alternative NC Therefore, there is no way to determine this percentage

Adverse Environmental Effects Which Cannot Be Avoided

Implementation of any of the alternatives would inevitably result in some adverse environmental effects. The severity of the adverse effects can be minimized by adhering to the direction in the management prescriptions and Forest-wide standards and guidelines in Chapter IV of the Forest Plan Some impacts, however, generally cannot be avoided if there are any management activities at all.

Soil disturbance is a result of timber harvest, slash treatment, wildfires, and construction of utility corridors, roads, trails, and recreation sites Accompanying erosion will temporarily adversely affect water quality and fish habitat

Where the Forest is managed for timber, visual quality will be changed to an unnatural patchwork appearance

Air quality will be temporarily degraded in localized areas by smoke, dust, and vehicle emissions

Wildlife would be displaced where their habitat is disturbed by timber and recreational activities, and some populations would decrease in alternatives which significantly reduce their habitat.

Relationship Between Short-Term Uses and Long-Term Productivity

The relationship between the short-term uses of the environment and the maintenance and/or enhancement of long-term productivity is complex Short-term uses are those that generally occur on a yearly basis on some area of the Forest, such as timber harvest as a use of the wood resource, livestock grazing as a use of the forage resource, and recreation as a use of wilderness and water resources.

Long-term productivity refers to the land's capability to continue to produce resources for future generations. It is assumed that maintaining soil productivity and water quality will assure maintenance of long-term productivity. Where timber is managed intensively, activities such as slash burning may reduce the productivity of sites. Land is taken out of production when roads are constructed. Under all alternatives, the long-term productivity of the Forest is protected from unacceptable degradation by specific standards and guidelines.

Because Alternatives NC, A, B, B(Dep), and C have the highest amounts of timber production, they would have the greatest potential to adversely affect long-term productivity Alternatives G and H would maintain the highest levels of natural site productivity.

Irreversible or Irretrievable Resource Commitments

Actions which disturb a resource to the extent that it can only be renewed over a long period of time, or which remove or destroy irreplaceable resources, include: removal of rock, road construction, excessively hot slash burning, harvest of old growth, and modification of natural areas that could have supported research on natural systems These activities are primarily associated with timber management, so they would be most evident in Alternatives NC, A, B, B(Dep), and C They would be least evident in Alternatives G and H, which emphasize maintenance of natural systems.

Significant Cumulative Effects

Cumulative effects occur when effects of National Forest management activities combine with effects produced on lands of others to produce a greater net effect than either would if considered separately. Cumulative effects will occur as a result of implementing any alternative In some alternatives, actions taken on National Forest lands will moderate the cumulative effects. In other alternatives, actions on National Forest lands will increase the level of effects expected.

In all alternatives, the Management Requirements of NFMA will be met through implementation of standards and guidelines, including Best Management Practices, which ensure state water quality standards are met In addition, the combined rate of harvest for Forest and private lands impacting major watersheds would not exceed the level that could cause significant degradation of watershed stability, especially given the Forest practices to meet Management Requirements Therefore, no significant cumulative effects on soil and water resources are expected.

The cumulative effects on wildlife resources varies by alternative depending on the amount of wildlife habitat impacted, the degree to which it is modified, and the length of time it is functioning at less than desired level All FEIS alternatives, except Alternative NC, meet Management Requirements for wildlife and, therefore, avoid any significant cumulative effects. Alternative NC does not meet MRs and would have a high probability of causing adverse cumulative effects on viability of northern spotted owl populations

Unpredictable and uncontrollable events such as wildfire, windstorm, flooding and activities on private land could occur in concert with planned Forest activities and result in significant cumulative effects on the area Few allowances for such outside influences are provided in any alternative

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